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OMB No. 0704-0188

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See Attached List	N/A
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6. AUTHOR(S)	5d. PROJECT NUMBER
See Attached List	N/A
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See Attached List	N/A
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Kristi Laug AFRL/PROP 1950 Fifth Street Wright-Patterson AFB OH 45433 937-255-3362	N/A
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a. REPORT	b. ABSTRACT	c. THIS PAGE	Unlimited Distribution	See Attached List	Kristi Laug
					19b. TELEPHONE NUMBER (include area code) 937-255-3362

PL(OLAC)/RKAS Concentrator Information

February 11, 1993

This package contains information on the PL(OLAC)/RKAS solar concentrator for those who need to do modeling or other calculations. It contains the original design drawings, a map showing damaged concentrator facets, modeled solar flux, and a list of the approximate facet center positions. Measured flux data will be added to this package after we can realign our concentrator facets. We will also try to keep this information up to date as changes are made. Use this data at your own risk. We are willing to assist so please call, write, or email if you need anything.

The concentrator design drawings are accurate to the best of our knowledge. We used dimensions from the drawings to calculate the facet center positions for our own models (using some approximations). These approximate facet center positions are listed separately or you can get these electronically if you prefer. They are listed in (x, y, z) format. The coordinate system is right-handed with the x axis pointing up, the y axis pointing horizontally, and the z axis pointing towards the focal point. The origin is at the concentrator vertex. We have found that the calculated facet z components are within a centimeter. The x and y components could be off by several centimeters in the azimuthal direction. The magnitude of the x and y components, $\sqrt{x^2 + y^2}$, is believed to be accurate to within a few millimeters.

The facets have two different values depending on which ring they are in (ring 1 is the closest to the concentrator center and ring 8 is the outermost). Facets in rings 1 through 5 have a focal length of 4.33 ± 0.03 meters. Facets in rings 6 through 8 have a focal length of 4.61 ± 0.03 meters. A number of facets are broken or missing. The cracks have been overlayed on a concentrator facet drawing (note the facets are not quite the proper shape in this drawing). Some of the cracks cause only slight problems. others give slope errors on the order of 5 milliradians. Other facets are completely missing (filled in on drawing), or covered (by a water based paint) because of the severity of the cracks. Also note that the gap that seperates neighboring facet reflecting surfaces is approximately one half of a centimeter.

We ran our concentrator model and plotted results for the target-plane placed at three different positions: 4.05, 4.10, and 4.15 meters from the concentrator vertex. The model assumed the concentrator focal point to be at 4.15 meters from the concentrator vertex. This package contains a contour plot and a surface plot for each position. These plots use the same scale; The plot boundaries extend from -10 cm to +10 cm from the target center in both target dimensions. The surface plot intensity scale is the same for all surface plots. The label of each plot reveals the assumed total slope error, 1.5 milliradians, the focal point of the concentrator, 4.15 meters, and the target position. The heliostat is assumed to reflect 90% of the incident light and the concentrator is assumed to reflect 94%

of the light from heliostat. The incident solar flux at the heliostat is assumed to be 1000 watts/meter^2. These values assume optimal weather conditions, and well cleaned optical surfaces. The contour plot for the target at 4.15 meters shows that 10,350 suns (14,000,000 watts/meter^2) can be achieved at the center of the target under these conditions.

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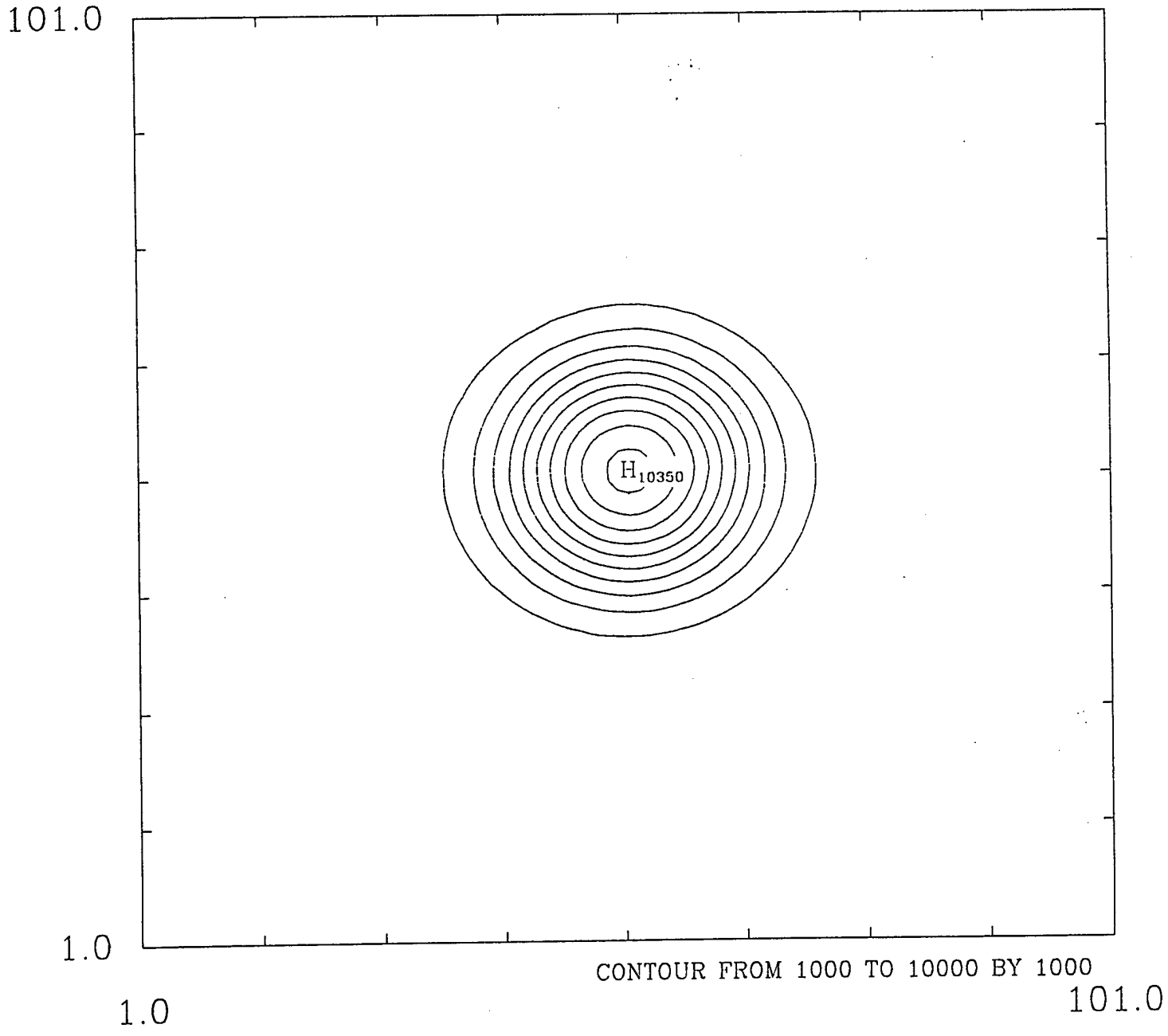
holmes@solar.ple.af.mil (192.42.141.185): Email address

1.5−4.15−4.15.BIN



CONTOUR FROM 1000 TO 10000 BY 1000

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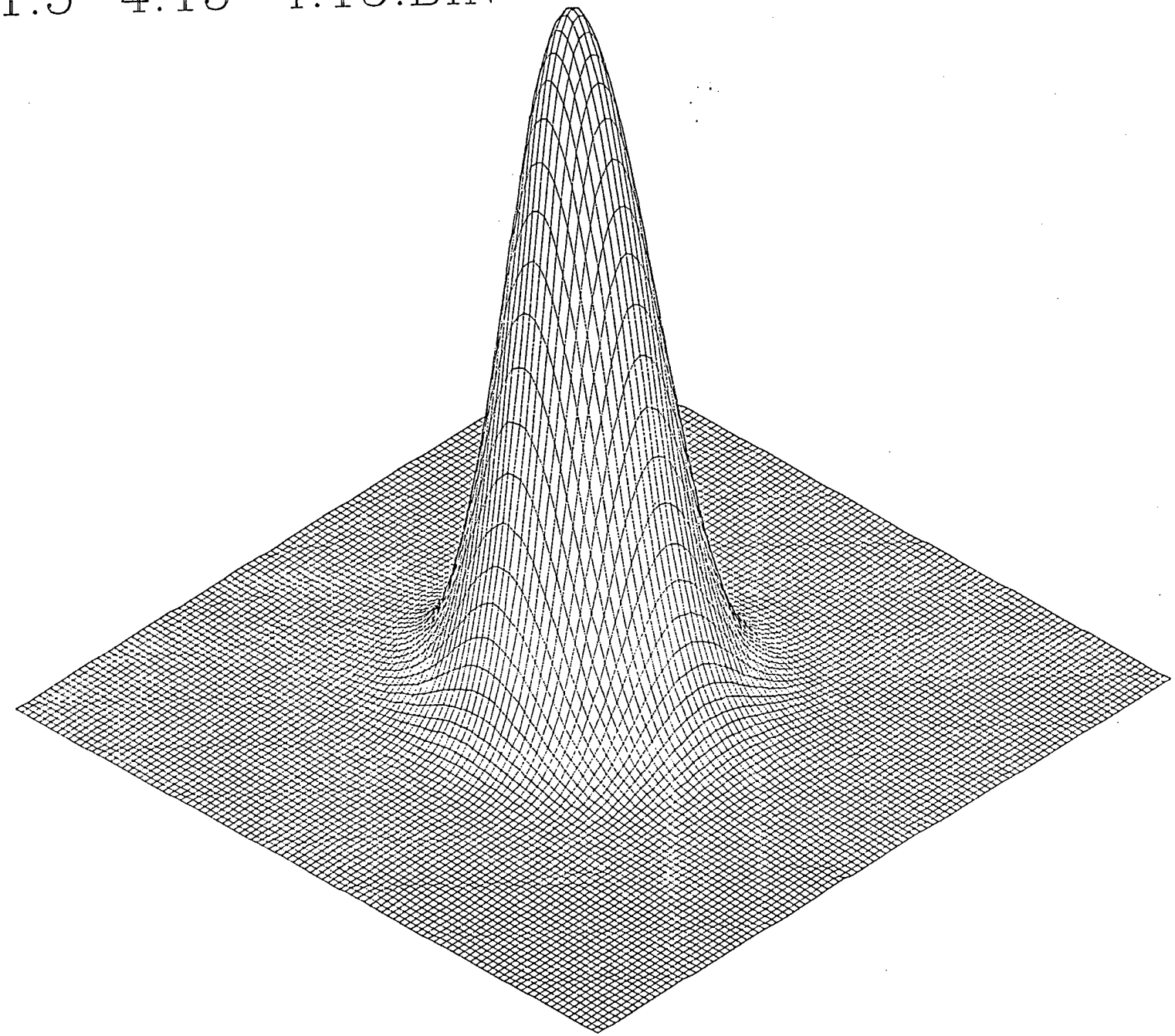

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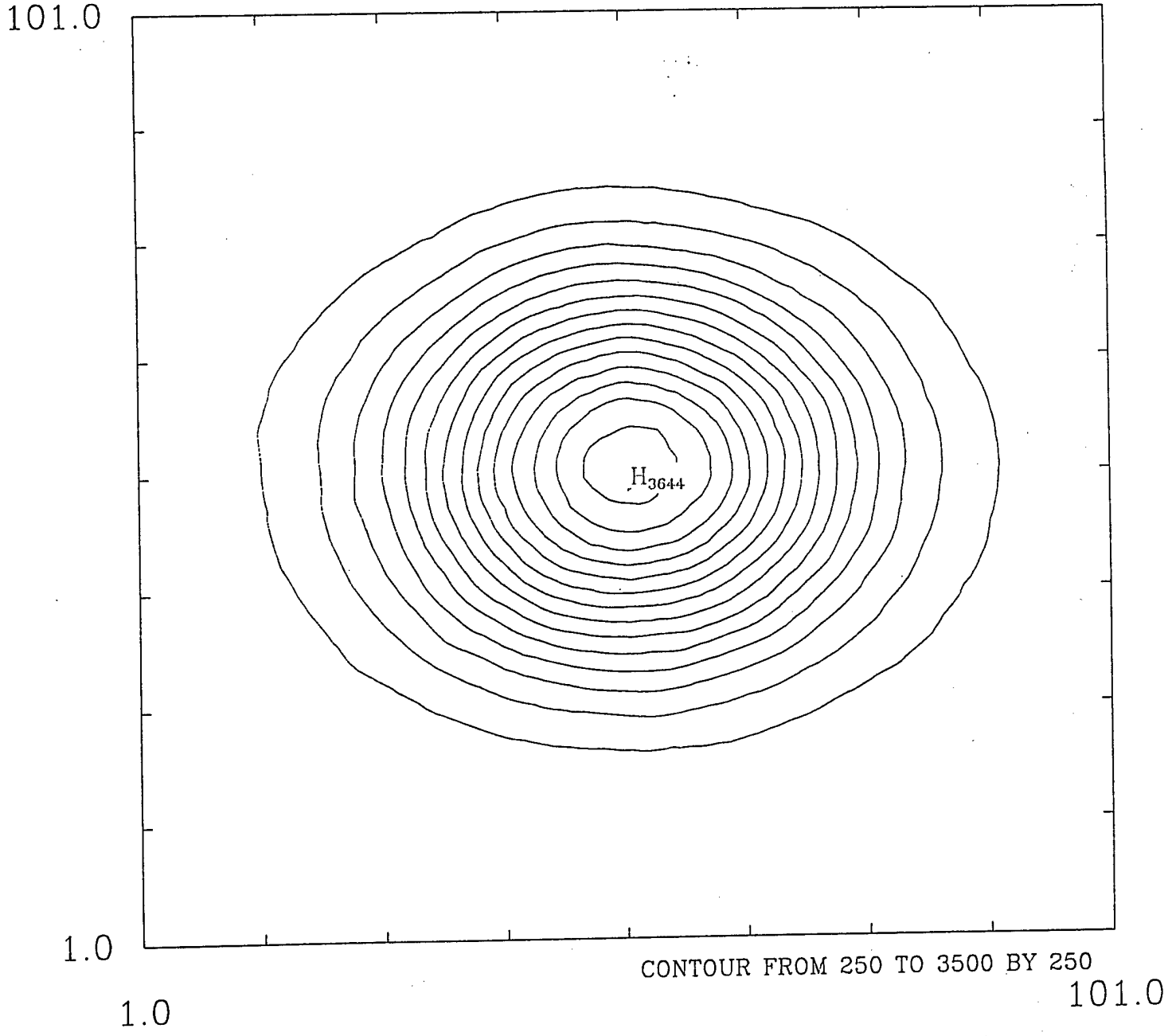

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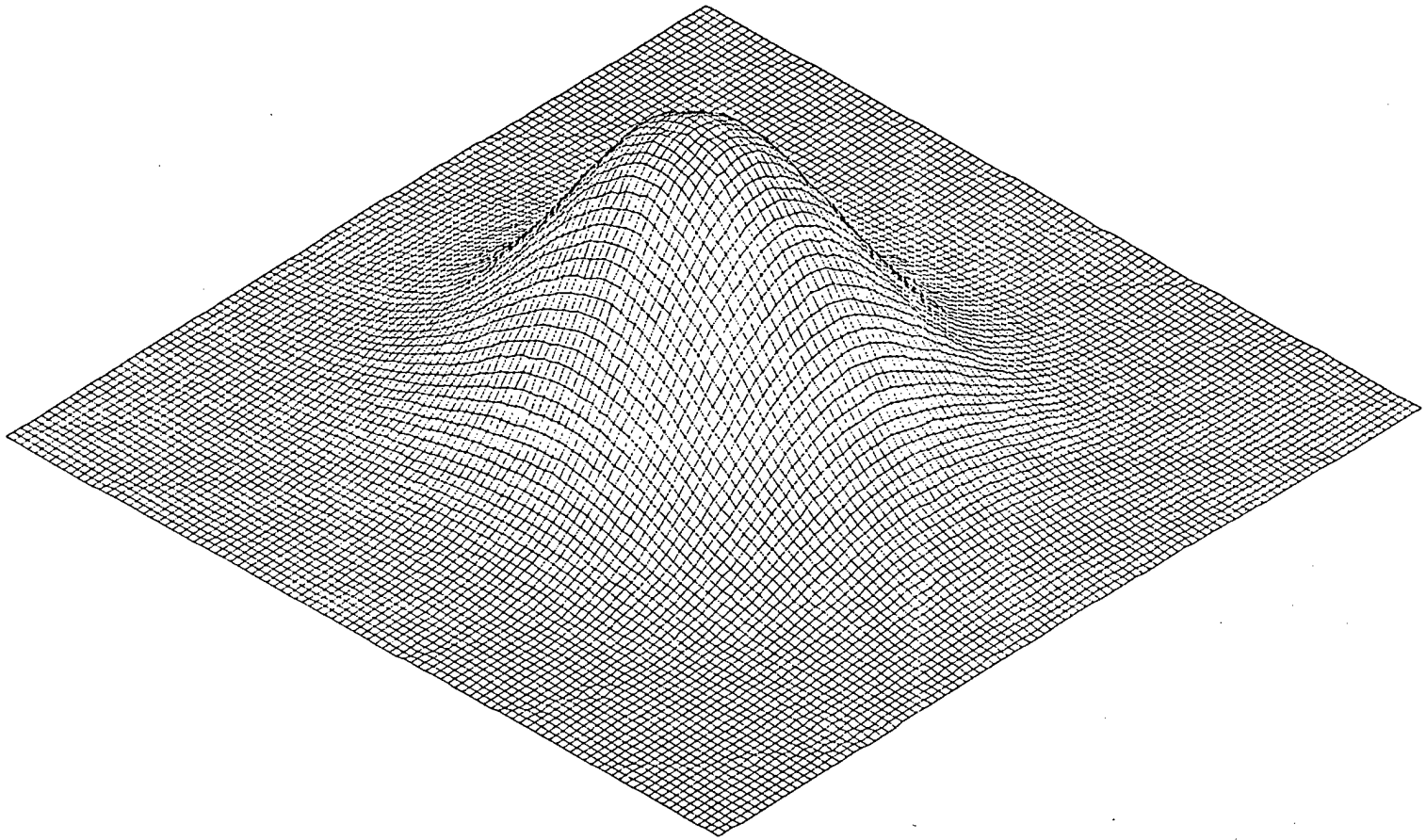

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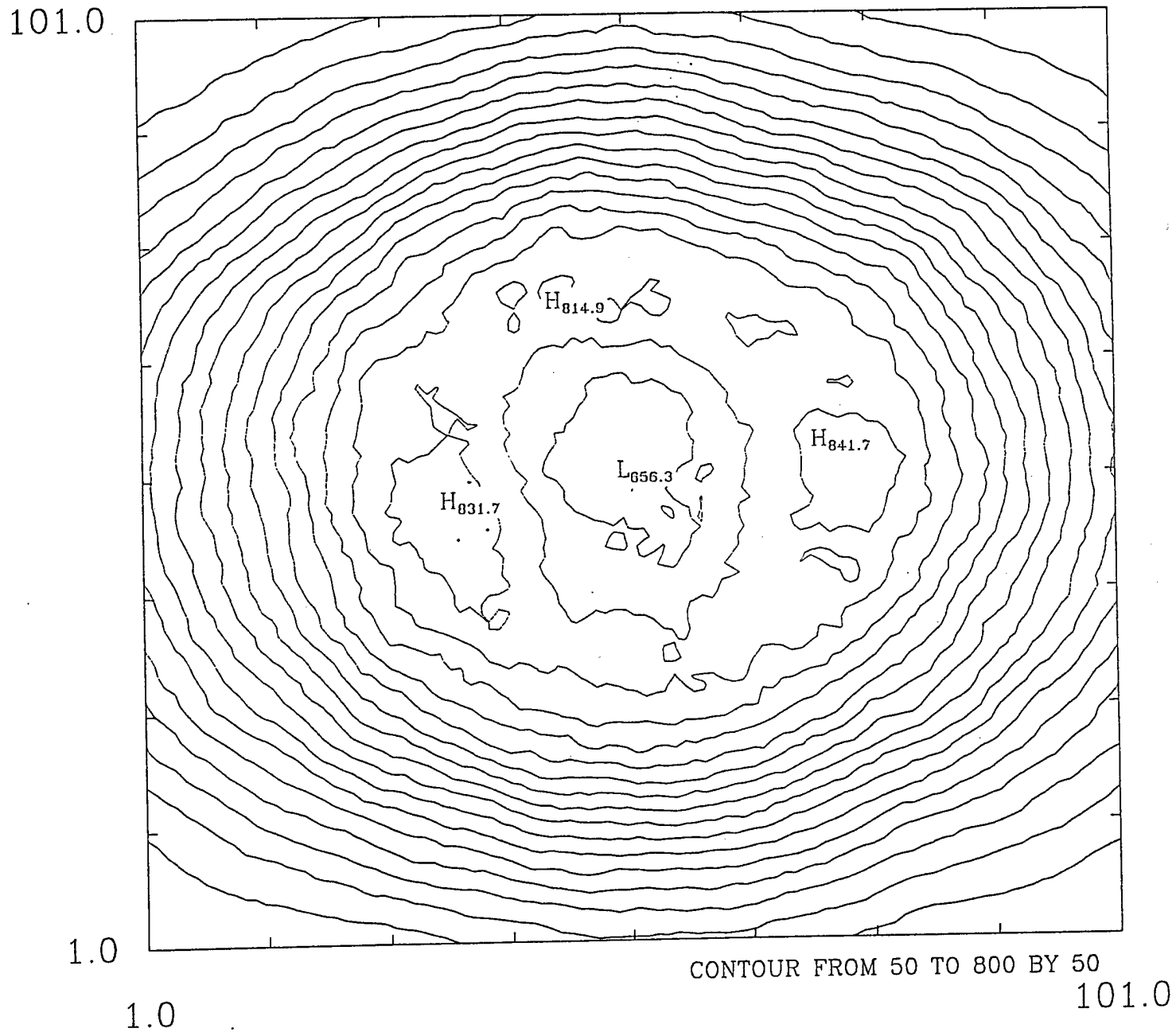

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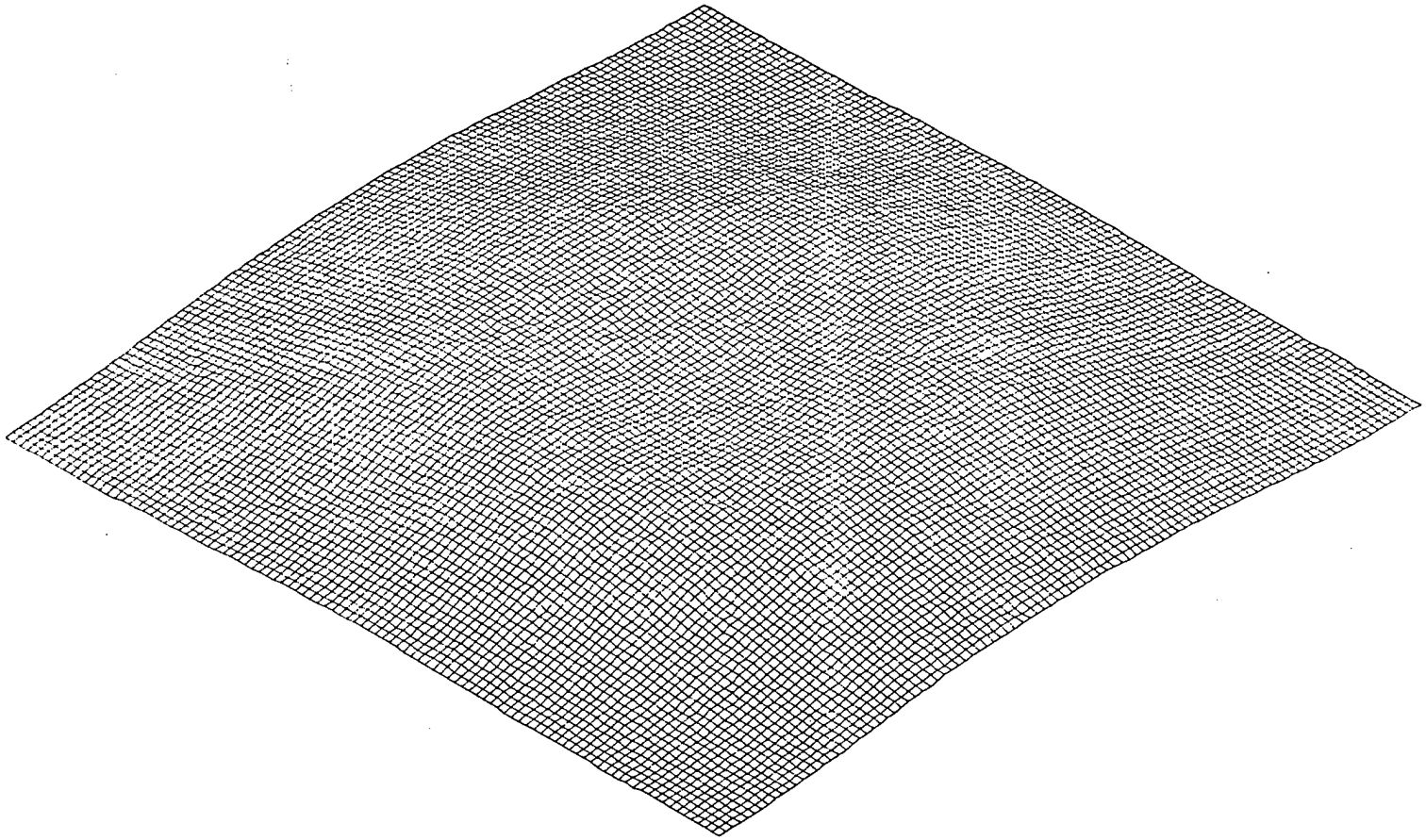

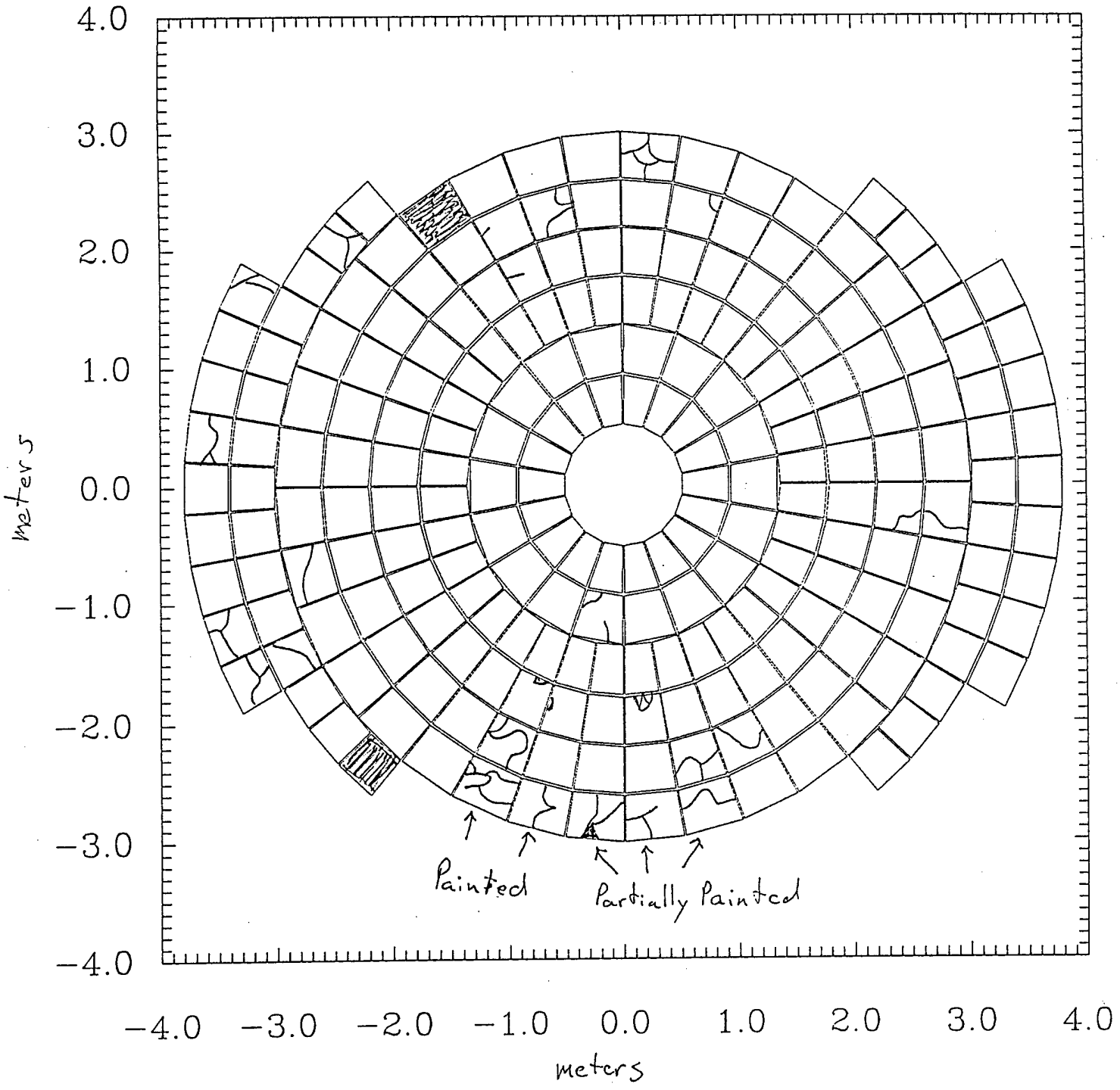
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meters
Painted
Partially Painted

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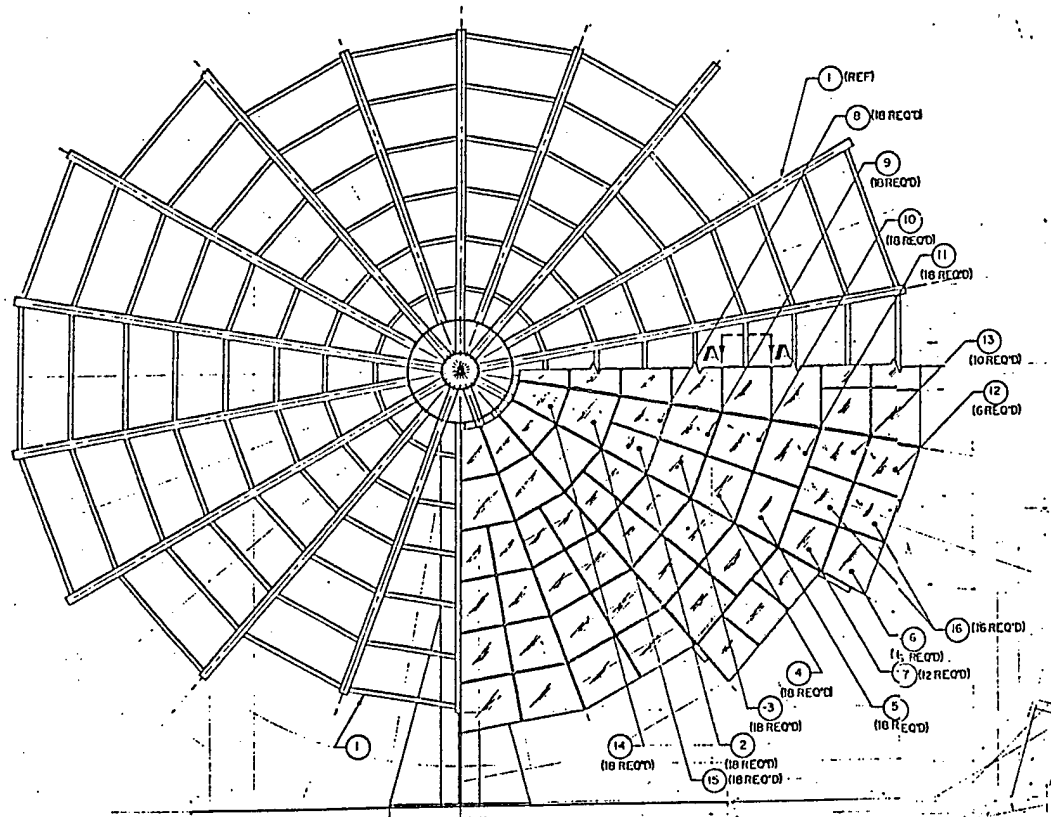

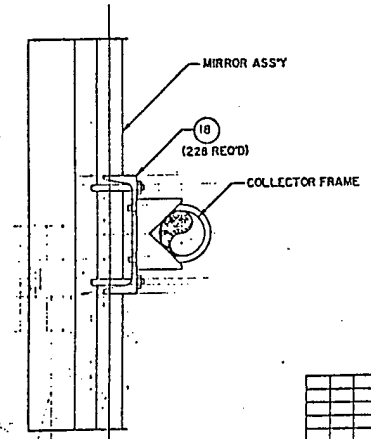

SECT A A
TYP MIRROR INST'L
SCALE: HALF

D/L

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2	18			X828099-30		18
2	18			X828099-10		17
2	12	MIRROR R/H ASS'Y		X828098-50		16
2	6			-110		15
2	18			-70		14
2	16			-50		13
2	18			-30		12
2	18			X828098-10		11
2	12	MIRROR L/H ASS'Y		X828097-50		10
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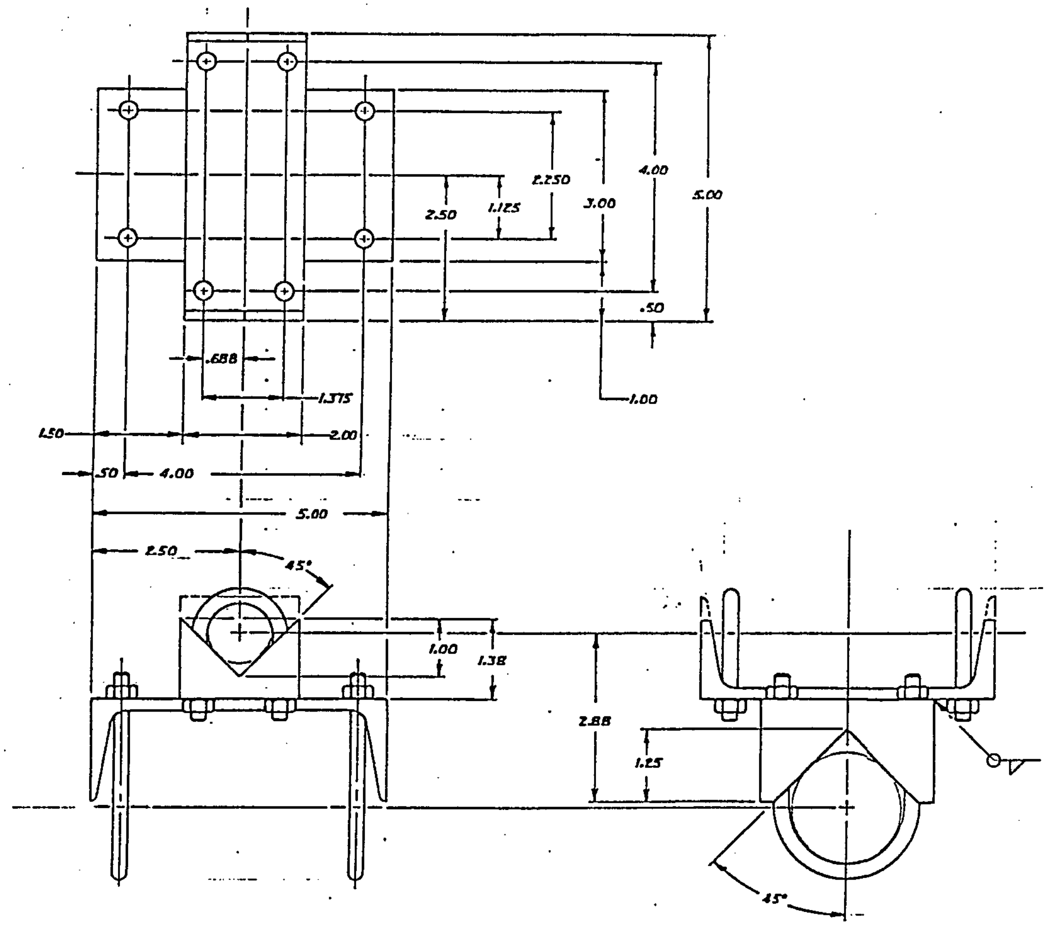
2	18			-70		8
2	18			-50		7
2	18			-30		6
2	18			X828097-10		5
		COLLECTOR INST'L		X828152-10		4
		COLLECTOR ASS'Y		-10		3

PARTS LIST

U.S. AIR FORCE

SOLAR COLLECTOR ASSEMBLY
SOLAR ROCKET STUDIES

07870 | E | X828095



QTY	PART NO.	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL SPECIFICATION	ITEM
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2		U-BOLT 3/4 PIPE		3043T15	CATALOG 87 RP.307	3
1		BRACKET UPPER		-03	QQ-A-200/8 SC 2.32 × 2.00	2
1		BRACKET LOWER		-01	6061 ALUM SC 2.32 × 3.00	1
262		BRACKET ASS'Y		-10		

PARTS LIST

U.S. AIR FORCE

BRACKET MIRROR MOUNTING
SOLAR COLLECTOR MIRROR
SOLAR ROCKET STUDIES

SIZE	CODE	DRAWING NO.
D	07870	XB2B096

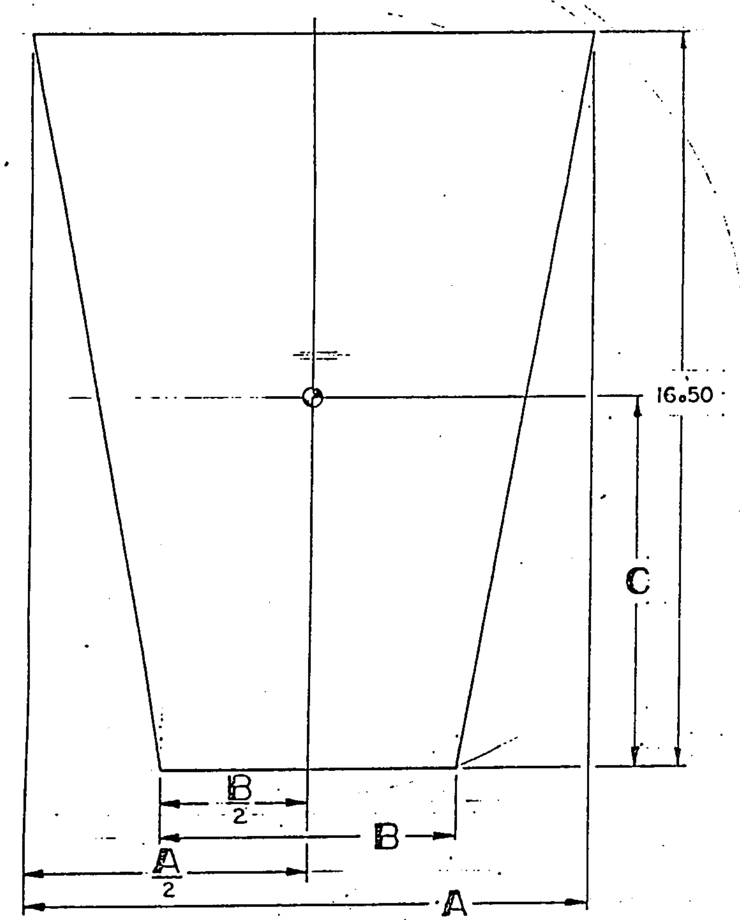
573005 55

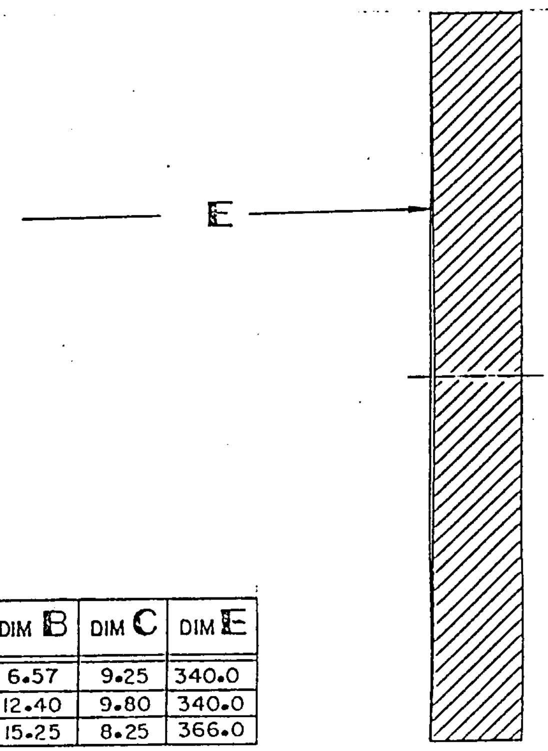
SHEET 1 of 1

XB2B095

APPLICATION

ENGINEERING DRAWING LAYOUT D





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-03	9.09	18.16	6.20	12.40	9.80	340.0
-05	7.63	15.25	7.63	15.25	8.25	366.0

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED

PARTS LIST

-05	-03	-01	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL / SPECIFICATION
22	—	—		SUBSTRATE		-05	FOAMGLAS—PITTSBURGH/CORNING CORP
—	20	—				-03	
—	—	22				-01	

QUANTITY REQUIRED PER DASH NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES — TOLERANCES: FRACTIONS ± 1/64; DECIMALS .XX ± .020, .XXX ± .010; ANGLES ± 1°

X828099 — NEXT ASSEMBLY — APPLICATION

U.S. AIR FORCE

TITLE: SUBSTRATE CENTER SOLAR COLLECTOR MIRROR SOLAR-ROCKET STUDIES

DR: Rocacki 21 Sept 82
CHK: J Nauyokas 23 Sep 82

SIZE: C — CODE IDENT NO.: 07870 — DRAWING NO.: X828105

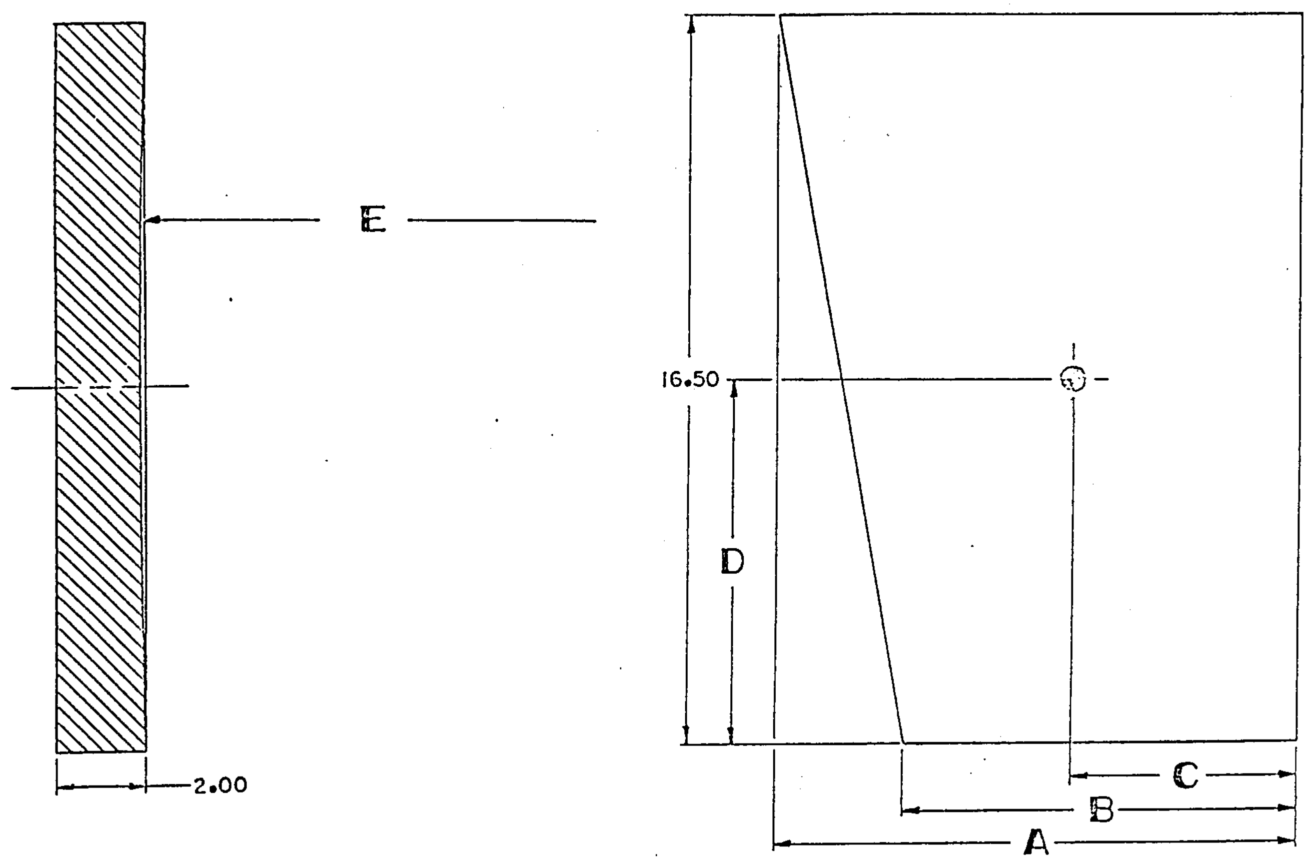
SCALE: — 573005SS — SHEET 1 OF 1

X 828105

ENGINEERING DRAWING LAYOUT C

AF 1654

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



PART Nº	DIM A	DIM B	DIM C	DIM D	DIM E
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-03	14.60	11.77	6.62	8.55	340
-05	17.40	14.61	8.02	8.90	340
-07	20.16	17.40	9.41	8.45	363
-11	17.92	15.25	8.31	8.47	366
-13	15.25	12.54	6.97	8.52	366

-13	-11	-07	-05	-03	-01	STK	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL / SPECIFICATION
12	—	—	—	—	—				—13	
—	8	—	—	—	—				—11	
—	—	20	—	—	—		SUBSTRATE		—07	FOAMGLAS—PITTSBURGH/CORNING CORP
—	—	—	20	—	—				—05	
—	—	—	—	20	—				—03	
—	—	—	—	—	20				—01	

QUANTITY REQUIRED PER DASH NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES — TOLERANCES ON: FRACTIONS ± 1/64 DECIMALS .XX ± .020 .XXX ± .010 ANGLES ± 1/2°

CURRENT CODE IDENT NO.	NEXT ASSEMBLY	USED ON
	X828098	

APPLICATION

DR Pacock 21/Sept/82
CHK J Nangakes 23 Sep 82
ENGR
AIR FORCE AUTHENTICATION
AIR FORCE RELEASE

U.S. AIR FORCE

TITLE SUBSTRATE R/H
SOLAR COLLECTOR MIRROR
SOLAR ROCKET STUDIES

SIZE	FSCM NO.	DRAWING NO.
C	07870	X828104

SCALE —— 573005SS SHEET 1 OF 1

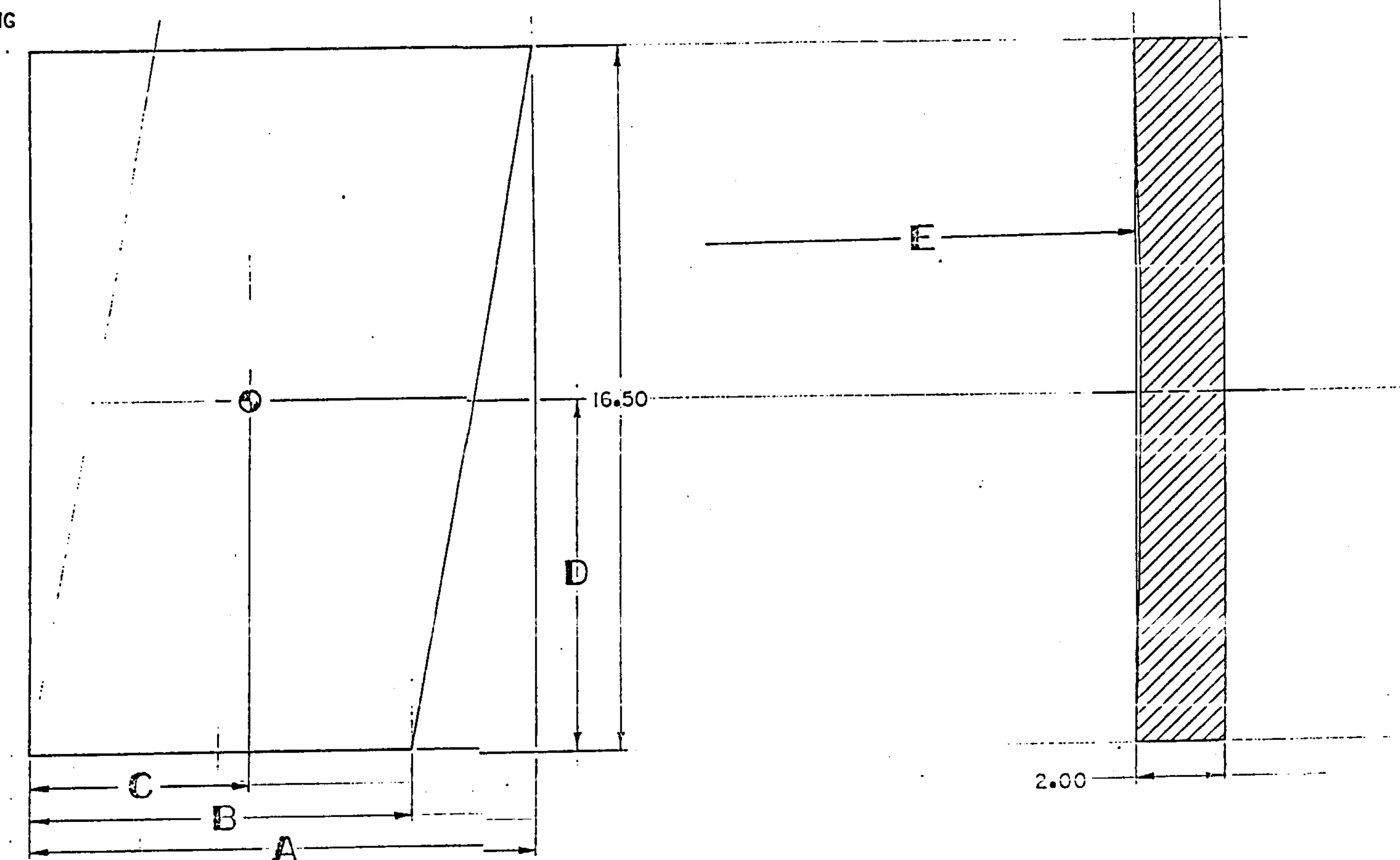
ENGINEERING DRAWING LAYOUT C

AF FORM 1654

X828104

NOTES

1. PREGRIND USING CONTOUR SANDING BLOCK FURNISHED BY A.F.R.P.L.
2. SAND THIS AREA, BOTH SIDES, USING 81 GRIT SANDPAPER.



REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

PART №	DIM A	DIM B	DIM C	DIM D	DIM E
-01	11.76	8.90	5.20	8.63	340
-03	14.60	11.77	6.62	8.55	340
-05	17.40	14.61	8.02	8.90	340
-07	20.16	17.40	9.41	8.45	366
-11	17.92	15.25	8.31	8.47	366
-13	15.25	12.54	6.97	8.52	366

-13	-11	-07	-05	-03	-01	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL / SPECIFICATION
12	—	—	—	—	—		SUBSTRATE		-13	FOAMGLAS— PITTSBURGH/CORNING CORP
—	8	—	—	—	—				-11	
—	—	20	—	—	—				-07	
—	—	—	20	—	—				-05	
—	—	—	—	20	—				-03	
—	—	—	—	—	20				-01	

QUANTITY REQUIRED PER DASH NO.

PARTS LIST

CURRENT CODE IDENT NO.	NEXT ASSEMBLY	USED ON
	X828097	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES — TOLERANCES ON: FRACTIONS ± 1/64; DECIMALS .XX ± .030, .XXX ± .010; ANGLES ± 1/2°

DR Bocock 21/Sept/52.
CHK L. Manjoko 23 Sep 52

AIR FORCE AUTHENTICATION

U.S. AIR FORCE

TITLE: SUBSTRATE L/H SOLAR COLLECTOR INSTALLATION SOLAR ROCKET STUDIES

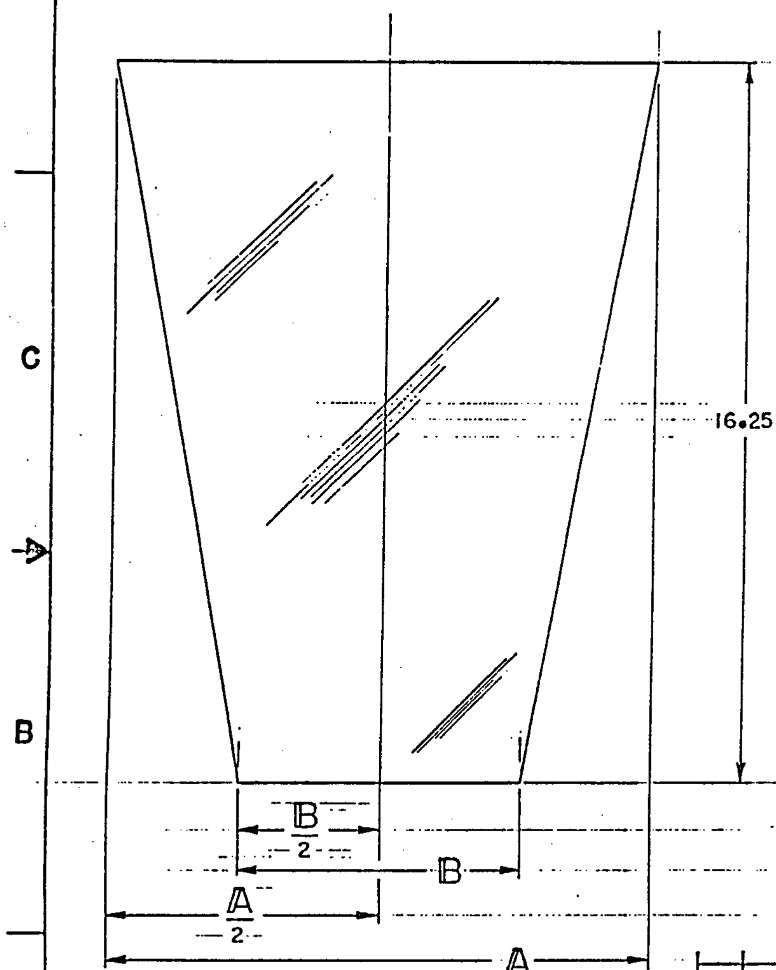
SIZE C | AIR FORCE CODE IDENT NO. 07870 | DRAWING NO. X828103

SCALE —— 573005 SS | SHEET 1 OF 1

X828103

AF FORM 1654

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	-03 DIM. "A" 17.91 - DIM. "B" 12.15	13 JAN 83	[illegible]



PART №	DIM A/2	DIM A	DIM B/2	DIM B
-01	6.06	12.13	3.16	6.32
-03	9.02	18.04	6.15	12.29
-05	7.50	15.00	7.50	15.00

(A)

-05	-03	-01	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL / SPECIFICATION
20	—	—		MIRROR		-05	GLASS SUPPLIER: CORNING GLASS TYPE: 0317 FUSION GLASS (1.5MM) COATING SPECS: 80mg/ft² SILVER 15mg/ft² COPPER 8mg/ft² PROTECT. BKG.
—	20	—				-03	
—	—	20				-01	

QUANTITY REQUIRED PER DASH NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES — TOLERANCES ON: FRACTIONS ± 1/32, DECIMALS .XX ± .020, .XXX ± .010, ANGLES ± 1/2°

DR [signature] 21 SEPT 82
CHK [signature] 23 Sep 82

AIR FORCE AUTHENTICATION

AIR FORCE RELEASE

U.S. AIR FORCE

TITLE: MIRROR, CENTER — SOLAR COLLECTOR MIRROR — SOLAR-ROCKET STUDIES

SIZE C | AIR FORCE CODE IDENT NO. 07870 | DRAWING NO. X828102

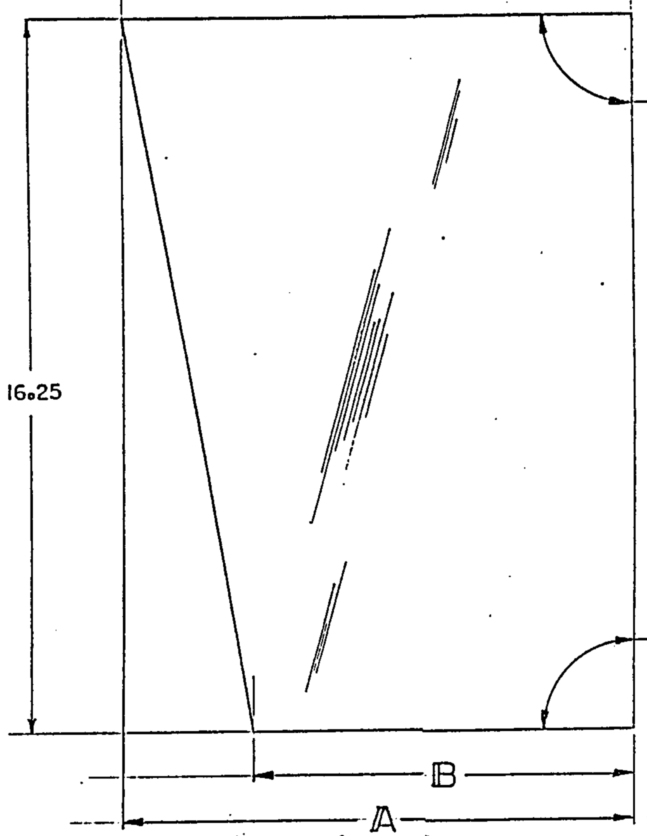
SCALE — 573005 SS — SHEET 1 OF 1

CURRENT OLD SHEET NO.	NEXT ASSEMBLY	USED ON
	X828099	

APPLICATION

X828102 A

LTR	DESCRIPTION		DATE	APPROVED
	-01-DIM. A W/11.51	DIM. B W/ 8.65		
A	-03 14.35	11.52	13JAN83	JX
	-05 17.15	14.36		
	-07 19.91	17.15		
	-11 17.67	15.00		
	-13-DIM. A W/15.00	DIM. B W/12.29		



PART №	DIM A	DIM B
-01	11.53	8.67
-03	14.44	11.62
-05	17.32	14.53
-07	20.15	17.42
-11	18.17	15.52
-13	15.43	12.74

(A)

-13	-11	-07	-05	-03	-01	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.
12	—	—	—	—	—				-13
—	8	—	—	—	—				-11
—	—	20	—	—	—		MIRROR		-07
—	—	—	20	—	—				-05
—	—	—	—	20	—				-03
—	—	—	—	—	20				-01

QUANTITY REQUIRED PER DASH NO.

MATERIAL / SPECIFICATION:
GLASS SUPPLIER: CORNING
GLASS TYPE: 0317 FUSION GLASS (1.5...)
COATING SPECS: 80mg/ft² SILVER
15mg/ft² COPPER
8mg/ft² PROTECT. BKG

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES — TOLERANCES ON: FRACTIONS ±.1/64 DECIMALS .XX ±.020 .XXX ±.010 ANGLES ±.0°

X828098 — NEXT ASSEMBLY — APPLICATION

U.S. AIR FORCE

L/H

TITLE: MIRROR R/H
SOLAR COLLECTOR MIRROR
SOLAR ROCKET STUDIES

DR Pocock 21 SEPT 82
ENG Maryuken 23 Sep 82

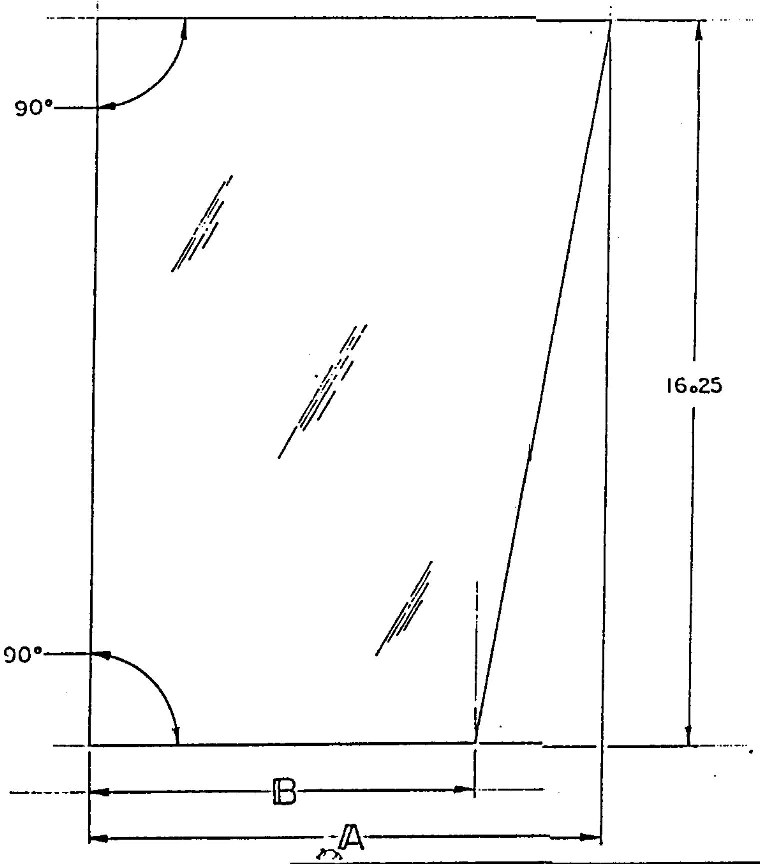
AIR FORCE AUTHENTICATION
AIR FORCE RELEASE

SIZE C | AIR FORCE CODE IDENT 07870 | DRAWING NO. X828101

SCALE — 573005 SS | SHEET 1 of 1

X828101 | A

AF FORM 1654



REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
A	-01 DIM. A W/ 11.51 DIM. B W/ 8.65 -03 14.35 11.52 -05 17.15 14.36 -07 19.91 17.15 -11 17.67 15.00 -13 DIM. A W/ 15.00 DIM. B W/ 12.29	13JAN83	JA

PART №	DIM A	DIM B
-01	11.53	18.67
-03	14.44	11.62
-05	17.32	14.53
-07	20.15	17.42
-11	18.17	15.52
-13	15.43	12.74

(A)

PARTS LIST

-13	-11	-07	-05	-03	-01	STK	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL / SPECIFICATION
12	—	—	—	—	—		MIRROR		-13	GLASS SUPPLIER : CORNING.
—	8	—	—	—	—				-11	GLASS TYPE : 0317 FUSION GLASS (1.5MM)
—	—	20	—	—	—				-07	COATING SPECS : 80mg/ft² SILVER
—	—	—	20	—	—				-05	15mg/ft² COPPER
—	—	—	—	20	—				-03	8mg/ft PROTECT. BKG
—	—	—	—	—	20				-01	

QUANTITY REQUIRED PER DASH NO.

X828097

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES — TOLERANCES ON: FRACTIONS ± 1/64; DECIMALS .XX ± .020, .XXX ± .010; ANGLES ± 1/2°

Bocock 21 Sept 82
Nagaoka 23 Sep 82

AIR FORCE AUTHENTICATION

AIR FORCE RELEASE

U.S. AIR FORCE

TITLE
MIRROR L/H
SOLAR-COLLECTOR MIRROR
SOLAR ROCKET STUDIES

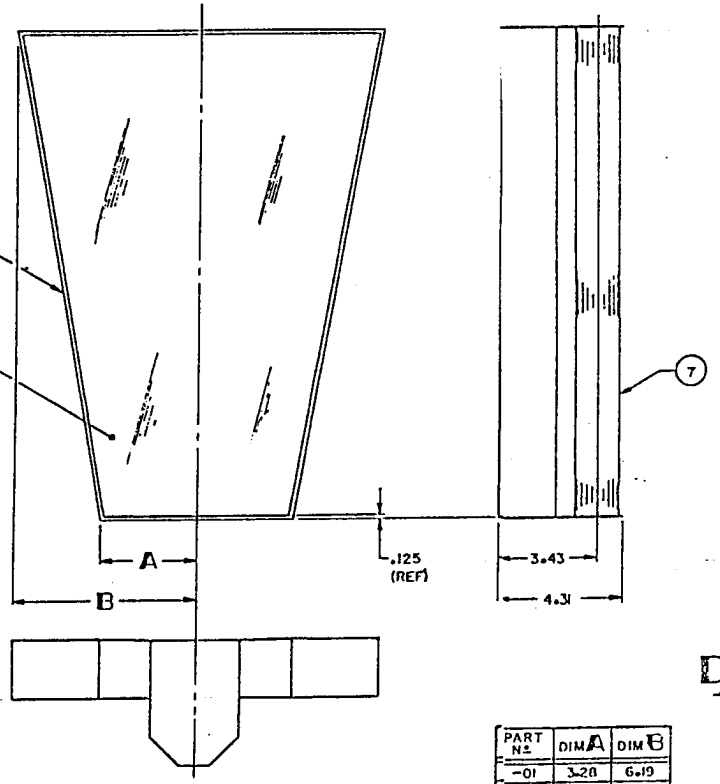
SIZE	AIR FORCE CODE IDENT NO.	DRAWING NO.
C	07870	X828100

X828100 A

NOTES:

1. MIX 2 PARTS OF EPOXY RESIN (8) TO 1 PART OF EPOXY RESIN (9) AND APPLY TO BACK OF MIRROR (1) (2) OR (3) COVERING COMPLEATLY TO A THICKNESS OF .003–.005 PRIOR TO ASSEMBLY WITH SUBSTRATE (4) (5) OR (6).
2. BOND BRACKET (7) TO SUBSTRATE (4) (5) OR (6) WITH TAB ADHESIVES.
3. SEAL ALL EDGES OF MIRROR (1) (2) OR (3) WITH EDGE SEAL (11)
4. SEAL ALL SIDES OF SUBSTRATE 4 5 OR 6 WITH FOAM GLASS SEAL 12
5. APPLY PAINT 13 ALL EXPOSED SURFACE OF SUBSTRATE (4) (5) OR (6)

(4) REQ'D ON -10
(5) REQ'D ON -30
(6) REQ'D ON -50
(1) REQ'D ON -10
(2) REQ'D ON -30
(3) REQ'D ON -50



PART No.	DIM A	DIM B
-01	3.28	6.19
-03	6.20	9.09
-05	7.63	7.63

A/R	A/R	A/R		PAINT		KEMGLAZE-A276	HUGHSON CHEMICALS POLYURETHANE	13
A/R	A/R	A/R		FOAMGLAS SEAL		PC-404	PITTSBURG CORNING ACRYLIC LATEX	12
A/R	A/R	A/R		EDGE SEAL		VULKEM 116	MAMECO CORP ONE PART POLYURETHANE	11
A/R	A/R	A/R		TAB ADHESIVE		PC88	PITTSBURGH CORNING TWO PART SILICONE	10
A/R	A/R	A/R		EPOXY RESIN		9427	FURANE PLASTICS	9
A/R	A/R	A/R		EPOXY RESIN		DER332	DOW CORP	8
22	20	20		BRACKET		X828106-10		7
22	—	—		SUBSTRATE		X828105-05		6
—	20	—				X828105-03		5
—	—	20				X828105-01		4
22	—	—		MIRROR		X828102-05		3
—	20	—				X828102-03		2
—	—	20				X828102-01		1
22	—	—		MIRROR, ASS'Y		-50		
—	20	—				-30		
—	—	20				-10		
-50	-30	-10	STK	NOMENCLATURE	CAGE IDENT	IDENTIFYING NO	MATERIAL/SPECIFICATION	QUANTITY PER ASSY NO

PARTS LIST

QUANTITY REQUIRED PER ASSY NO

UNLESS OTHERWISE SPECIFIED

X828095
NEXT ASSEMBLY
APPLICATION

ENGINEERING DRAWING LAYOUT B

U.S. AIR FORCE

SOLAR COLLECTOR MIRROR ASSEMBLY
SOLAR ROCKET STUDIES

D 07870 X828099

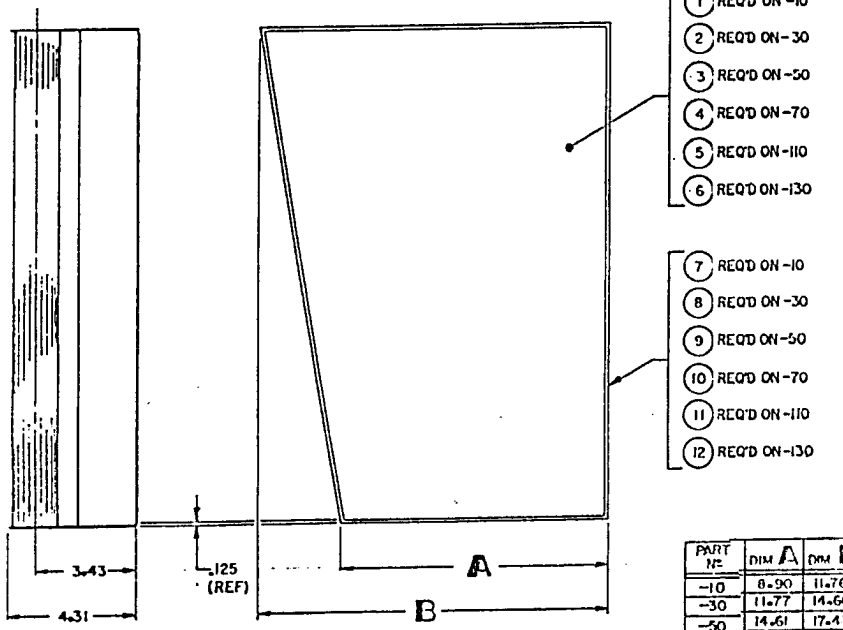
5730055

X828099

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

NOTES:

1. MIX 2 PARTS EPOXY RESIN (14) TO 1 PART OF EPOXY RESIN (15) AND APPLY TO BACK OF MIRROR (1) THRU (6) COVERING COMPLEATLY TO A THICKNESS OF .003 — .005 PRIOR TO ASSEMBLY WITH SUBSTRATE (7) THRU (12)
2. BOND BRACKET (13) TO SUBSTRATE (7) THRU (12) WITH TAB ADHESIVES
3. SEAL ALL EDGES OF MIRROR (1) THRU (6) WITH EDGE SEAL (11)
4. SEAL ALL SIDES OF SUBSTRATE (7) THRU (12) WITH FOAM GLASS SEAL (12)
5. APPLY PAINT 19 ALL EXPOSED SURFACES OF SUBSTRATE (7) THRU (12)



(1) REQ'D ON -10
(2) REQ'D ON -30
(3) REQ'D ON -50
(4) REQ'D ON -70
(5) REQ'D ON -110
(6) REQ'D ON -130

(7) REQ'D ON -10
(8) REQ'D ON -30
(9) REQ'D ON -50
(10) REQ'D ON -70
(11) REQ'D ON -110
(12) REQ'D ON -130

PART №	DIM A	DIM B
-10	8.90	11.76
-30	11.77	14.60
-50	14.61	17.43
-70	17.40	20.16
-110	15.25	17.92
-130	12.54	15.25

QUANTITY REQUIRED PER BASE NO						SYM	NOMENCLATURE	CAGE CODE	SPECIFICATION NO	MATERIAL / SPECIFICATION	SIZE NO	ZONE	ITEM NO
A/R	A/R	A/R	A/R	A/R	A/R		PAINT		KEMGLAZE-A276	HUGHSON CHEMICALS POLYURETHANE			19
A/R	A/R	A/R	A/R	A/R	A/R		FOAMGLAS SEAL		PC-404	PITTSBURGH CORNING ACRYLIC LATEX			18
A/R	A/R	A/R	A/R	A/R	A/R		EDGE SEAL		VULKEM 116	MAMECO CORP ONE PART URETHANE			17
A/R	A/R	A/R	A/R	A/R	A/R		TAB ADHESIVE		PC 88	PITTSBURGH CORNING TWO PART SILICONE			16
A/R	A/R	A/R	A/R	A/R	A/R		EPOXY RESIN		9427	FURANE PLASTICS			15
A/R	A/R	A/R	A/R	A/R	A/R		EPOXY RESIN		DER332				14
12	8	20	20	20	20		BRACKET		X828106-10				13
12	—	—	—	—	—		SUBSTRATE		X828104-13				12
—	8	—	—	—	—				-11				11
—	—	20	—	—	—				-07				10
—	—	—	20	—	—				-05				9
—	—	—	—	20	—				-03				8
—	—	—	—	—	20				X828104-01				7
12	—	—	—	—	—		MIRROR		X828101-13				6
—	8	—	—	—	—				-11				5
—	—	20	—	—	—				-07				4
—	—	—	20	—	—				-05				3
—	—	—	—	20	—				-03				2
—	—	—	—	—	20				X828101-01				1
12	—	—	—	—	—		MIRROR, ASS'Y		-130				
—	8	—	—	—	—				-110				
—	—	20	—	—	—				-70				
—	—	—	20	—	—				-50				
—	—	—	—	20	—				-30				
—	—	—	—	—	20				-10				
-130	-110	-70	-50	-30	-10								

PARTS LIST

X828130
APPLICATION

ENGINEERING DRAWING LAYOUT D

U.S. AIR FORCE

SOLAR COLLECTOR MIRROR R/H ASSEMBLY
SOLAR ROCKET STUDIES

SIZE	CODE IDENT NO	DRAWING NO
D	07870	X828098

SCALE — SHEET 1 OF 1

8	7	6	5	4	3	2	1

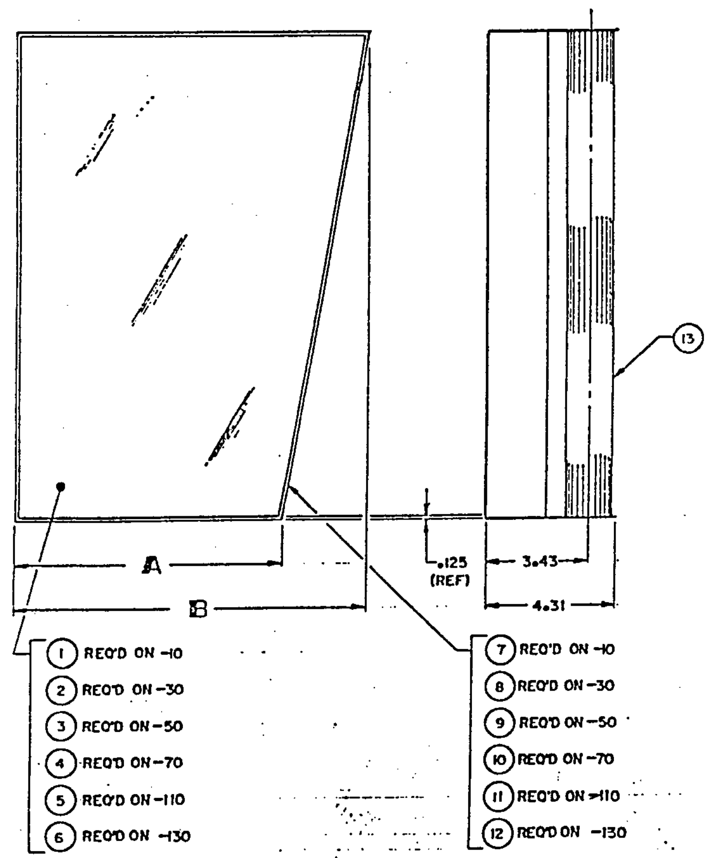
REVISIONS

LTR	DESCRIPTION	DATE	APPROVED

NOTES:

- MIX 2 PARTS OF EPOXY RESIN (14) TO 1 PART OF EPOXY RESIN (15) AND APPLY TO BACK OF MIRROR (1) THRU (6) COVERING COMPLEATLY TO A THICKNESS OF .003-.005 PRIOR TO ASSEMBLY WITH SUBSTRATE (7) THRU (12)
- BOND BRACKET (13) TO SUBSTRATE (7) THRU (12) WITH TAB ADHESIVES.
- SEAL ALL EDGES OF MIRROR (1) THRU (6) WITH EDGE SEAL (11).
- SEAL ALL SIDES OF SUBSTRATE (7) THRU (12) WITH FOAM GLASS SEAL (12)
- APPLY PAINT (19) ALL EXPOSED SURFACES OF SUBSTRATE (7) THRU (12)

NUMBER DO NOT INDICATE SPARES SEE DRAWING X828095 FOR AMOUNT OF SPARES REQ'D.



D/L

-130	-110	-70	-50	-30	-10	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO	MATERIAL/SPECIFICATION	UNIT WT	ZONE	FIND NO
A/R	A/R	A/R	A/R	A/R	A/R		PAINT		KEMGLAZE-A276	HUGHSON CHEMICALS			19
A/R	A/R	A/R	A/R	A/R	A/R		FOAMGLAS SEAL		PC-404	PITTSBURGH CORNING			18
A/R	A/R	A/R	A/R	A/R	A/R		EDGE SEAL		VULKEM 116	MAMECO CORP			17
A/R	A/R	A/R	A/R	A/R	A/R		TAB ADHESIVE		PC88	PITTSBURGH CORNING			16
A/R	A/R	A/R	A/R	A/R	A/R		EPOXY RESIN		9427	FURANE PLASTICS			15
A/R	A/R	A/R	A/R	A/R	A/R		EPOXY RESIN		DER 332	DOW CORP			14
10	8	20	20	20	20		BRACKET		X828096-10				13
10	—	—	—	—	—		SUBSTRATE		X828104-13				12
—	8	—	—	—	—				-11				11
—	—	20	—	—	—				-07				10
—	—	—	20	—	—				-05				9
—	—	—	—	20	—				-03				8
—	—	—	—	—	20				X828104-01				7
10	—	—	—	—	—		MIRROR		X828100-13				6
—	8	—	—	—	—				-11				5
—	—	20	—	—	—				-07				4
—	—	—	20	—	—				-05				3
—	—	—	—	20	—				-03				2
—	—	—	—	—	20				X828100-01				1
10	—	—	—	—	—		MIRROR, ASS'Y		—130				
—	8	—	—	—	—				—110				
—	—	20	—	—	—				—70				
—	—	—	20	—	—				—50				
—	—	—	—	20	—				—30				
—	—	—	—	—	20				—10				

QUANTITY REQUIRED PER DASH NO

PARTS LIST

APPLICATION: X828095

U.S. AIR FORCE

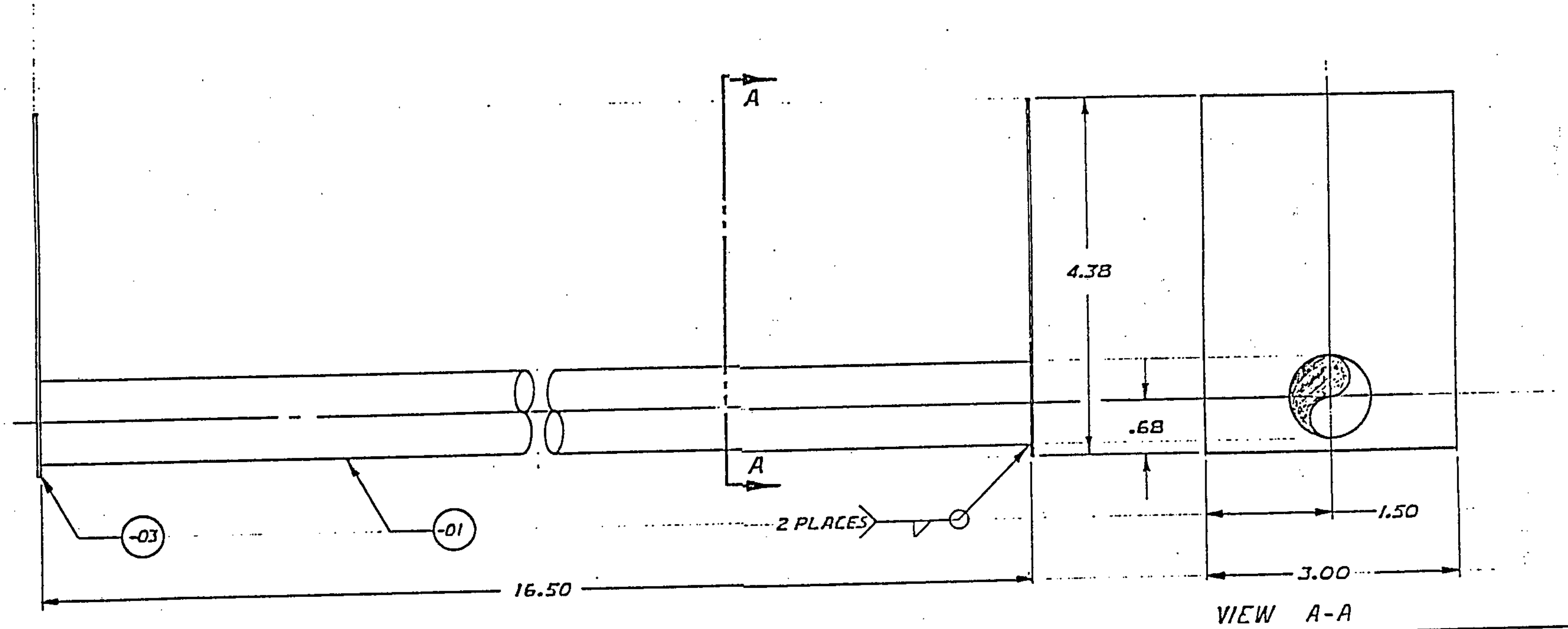
SOLAR COLLECTOR MIRROR L/H ASSEMBLY

SOLAR ROCKET STUDIES

SIZE D | 07870 | X828097

573005 SS

ENGINEERING DRAWING LAYOUT E



-10 BRACKET ASS'Y

QTY	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL / SPECIFICATION
2		END PLATE		-03	QQ-S-634 1020 STL PLATE 4.38 × 3.00 × .03
1		PIPE		-01	$\frac{3}{4}$ SCH 40 × 16.50 STL PIPE
262		MOUNT		-10	

QUANTITY REQUIRED PER DASH NO. — PARTS LIST — UNIT WT — ZONE — FIND NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES — TOLERANCES ON: FRACTIONS ± 1/64, DECIMALS .XX ± .020, .XXX ± .010, ANGLES ± 1/2°

APPLICATION: NEXT ASSEMBLY — USED ON: XB28099, XB28098, XB28097

U.S. AIR FORCE

TITLE: BRACKET MIRROR
SOLAR COLLECTOR MIRROR
SOLAR ROCKET STUDIES

SIZE: C — AIR FORCE CODE IDENT NO.: 07870 — DRAWING NO.: XB28106

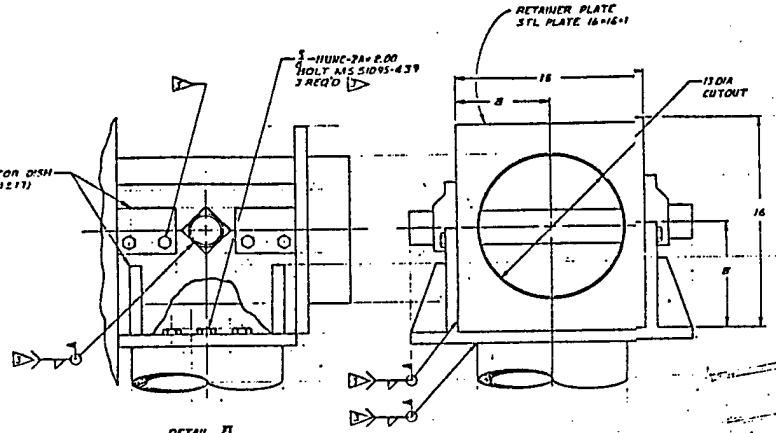
SCALE: FULL — 573005 SS — SHEET 1 OF 1

ENGINEERING DRAWING LAYOUT C

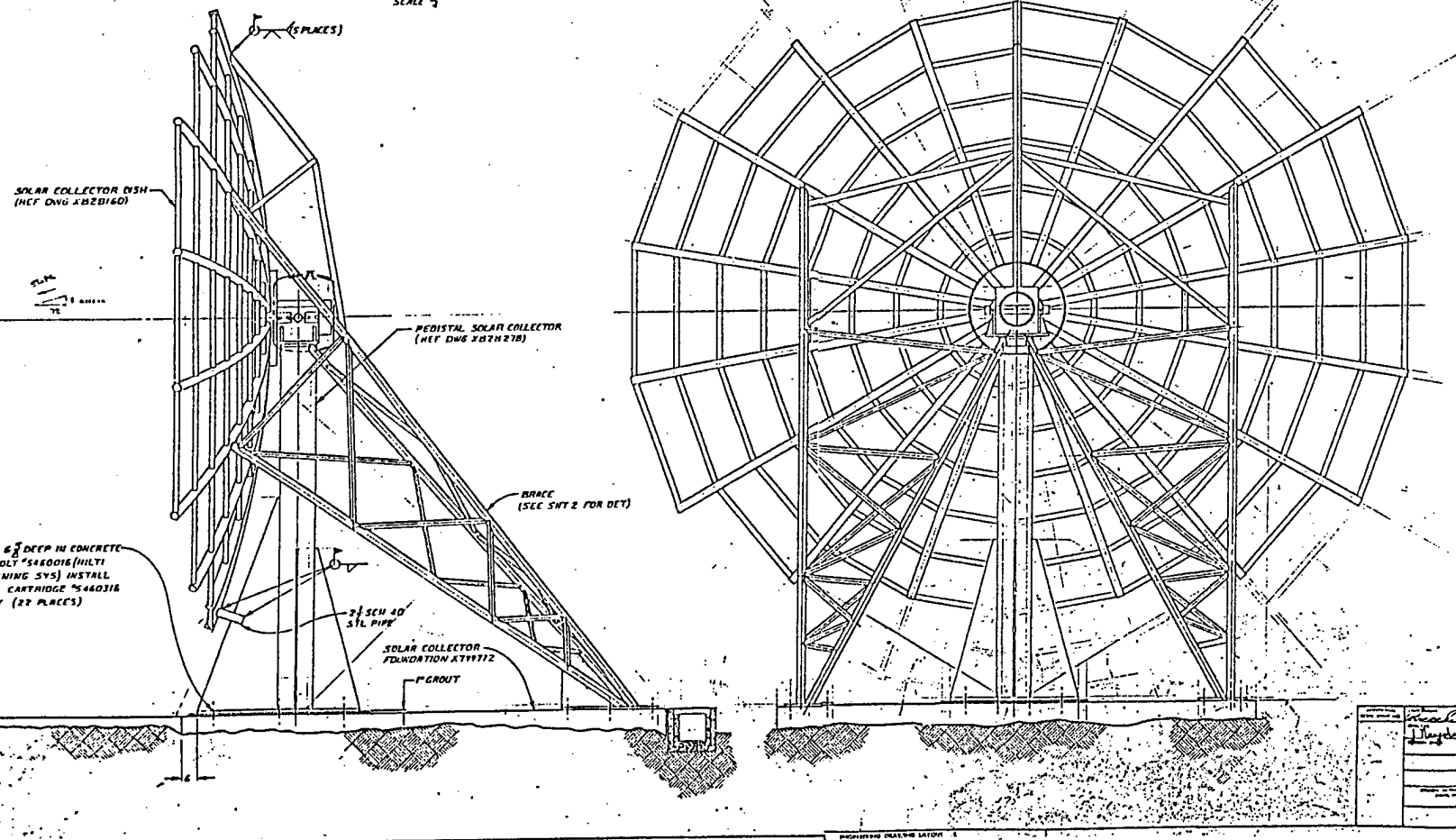
AF FORM 1654

XB28106

1. POSITION SOLAR COLLECTOR PEDESTAL ON PAD AND LEVEL BY GROUTING.
2. INSTALL SOLAR COLLECTOR MOUNT ASSY ON PEDESTAL.
3. INSTALL SOLAR COLLECTOR AND ALIGN WITH HELIOSTAT. TIGHTEN BOLTS AND WELD AS INDICATED.
4. ASSEMBLE BRACE



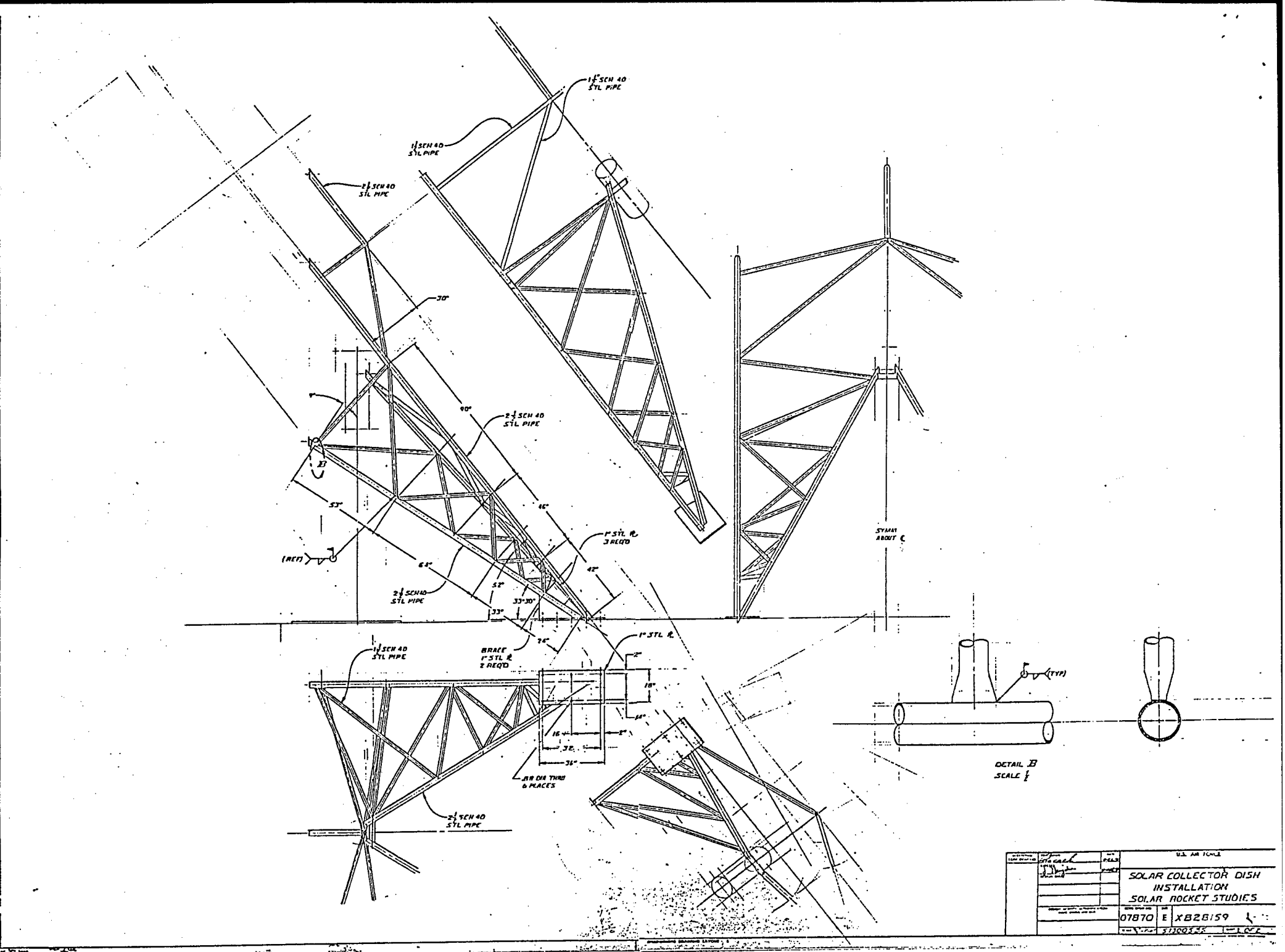
DETAIL 1
SCALE 1/2



U.S. AIR FORCE

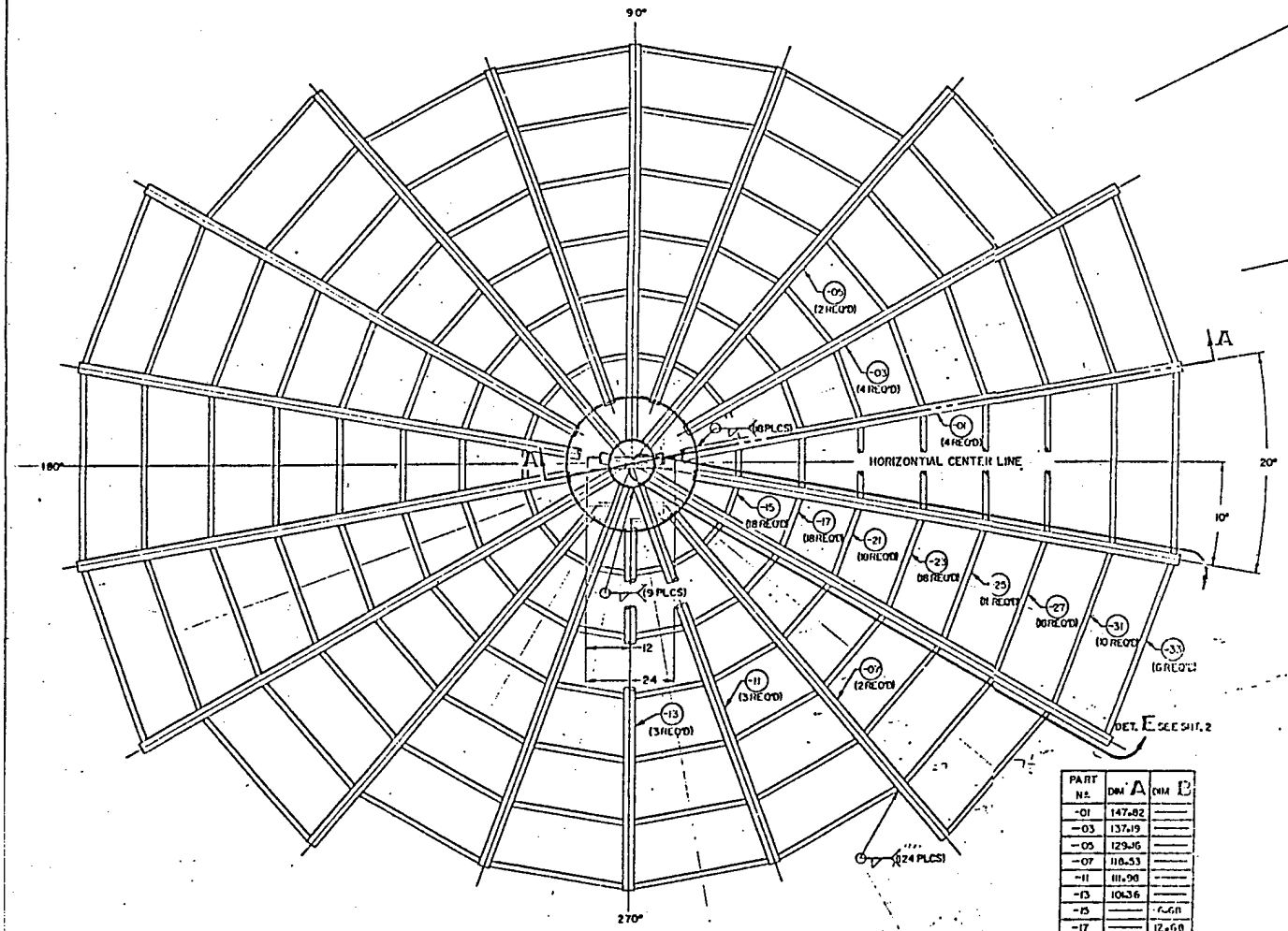
SOLAR COLLECTOR DISH INSTALLATION
SOLAR ROCKET STUDIES

07870	E	XBZG159
	SHEET 1 OF 2	


1½" SCH 40 STL PIPE
1½ SCH 40 STL PIPE
2½ SCH 40 STL PIPE
30°
90°
2½ SCH 40 STL PIPE
B
53"
46"
(REF)
64"
1" STL R. 3 REQ'D
42"
2½ SCH 40 STL PIPE
52"
33°30'
33"
74"
SYMM ABOUT ℄
1½ SCH 40 STL PIPE
BRACE 1" STL R. 2 REQ'D
1" STL R.
2"
18"
44"
16"
2"
32"
36"
Ø8 DIA THRU 6 PLACES
2½ SCH 40 STL PIPE
(TYP)
DETAIL B
SCALE ½
U.S. AIR FORCE
SOLAR COLLECTOR DISH INSTALLATION
SOLAR ROCKET STUDIES
07870
E
XB26159
51300545

NOTES:

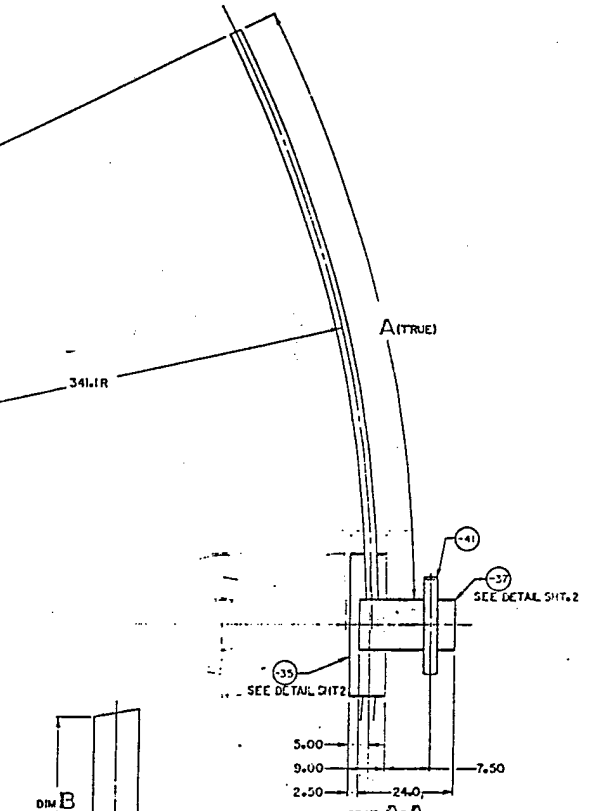
1. CENTER LINE OF PIVOT TUBE TO BE ON HORIZONTAL CENTER LINE OF COLLECTOR.



MIRROR MOUNTING FRAME ASS'Y

SCALE 1" = 1'-0"

PART No.	DIM A	DIM B
-01	147.82	———
-03	137.19	———
-05	129.16	———
-07	118.53	———
-11	111.98	———
-13	101.36	———
-15	———	6.68
-17	———	12.68
-21	———	18.68
-23	———	24.68
-25	———	30.33
-27	———	36.32
-31	———	41.96
-33	———	47.61



1	PIVOT TUBE	-41	COMTL STD STL PIPE	2½ SCH40 X 24.00
1	RING	-37		12 SCH40 X 24.00
1		-35		36 SCH40 X 9.00
6	MOUNT	-33		X 47.61 LONG
10		-31	COMTL STD 1½ SCH40 STL PIPE	X 41.96
18		-27		X 36.32
18		-25		X 30.33
18		-23		X 24.68
18		-21		X 18.68
18		-17		X 12.68
18	MOUNT	-15		X 6.68
3	ARM	-13	COMTL STD 2½ SCH40 STL PIPE	X 101.36
3		-11		X 111.98
2		-07		X 118.53
2		-05		X 129.16
4		-03		X 137.19
4	ARM	-01		X 147.82 LONG

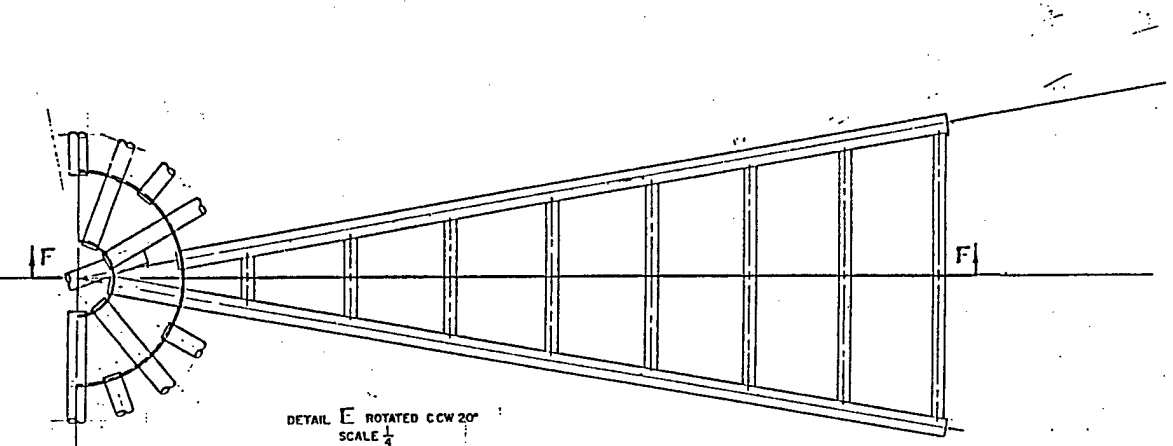
PARTS LIST

U.S. AIR FORCE

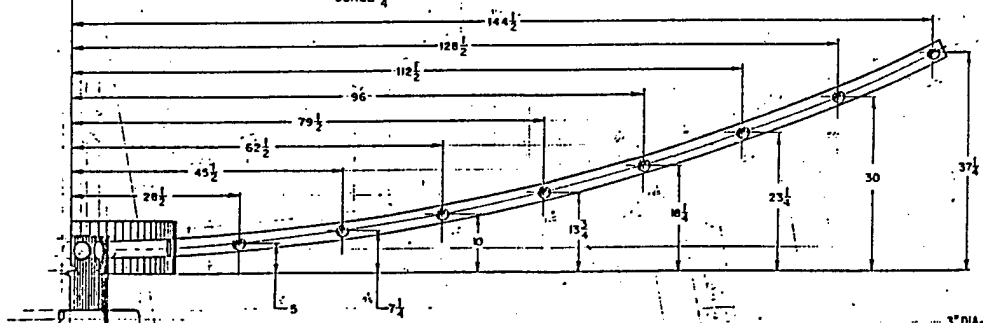
DISH-ASSEMBLY
SOLAR COLLECTOR
SOLAR ROCKET STUDIES

07870 | E | X828160

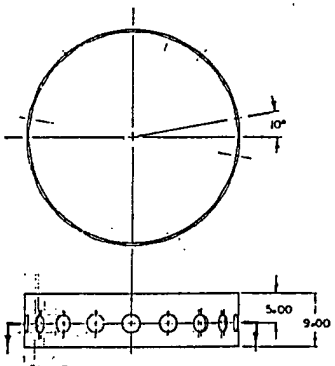
SC-0 37300555 — 1 OF 2



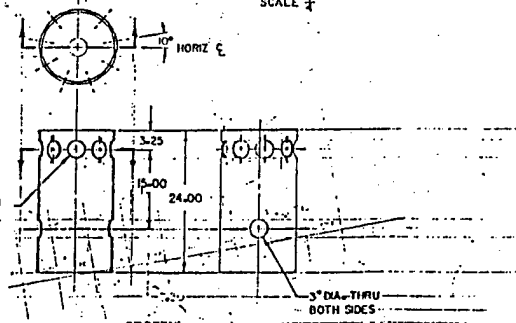
DETAIL E ROTATED CCW 20°
SCALE 1/4



SECT. F-F

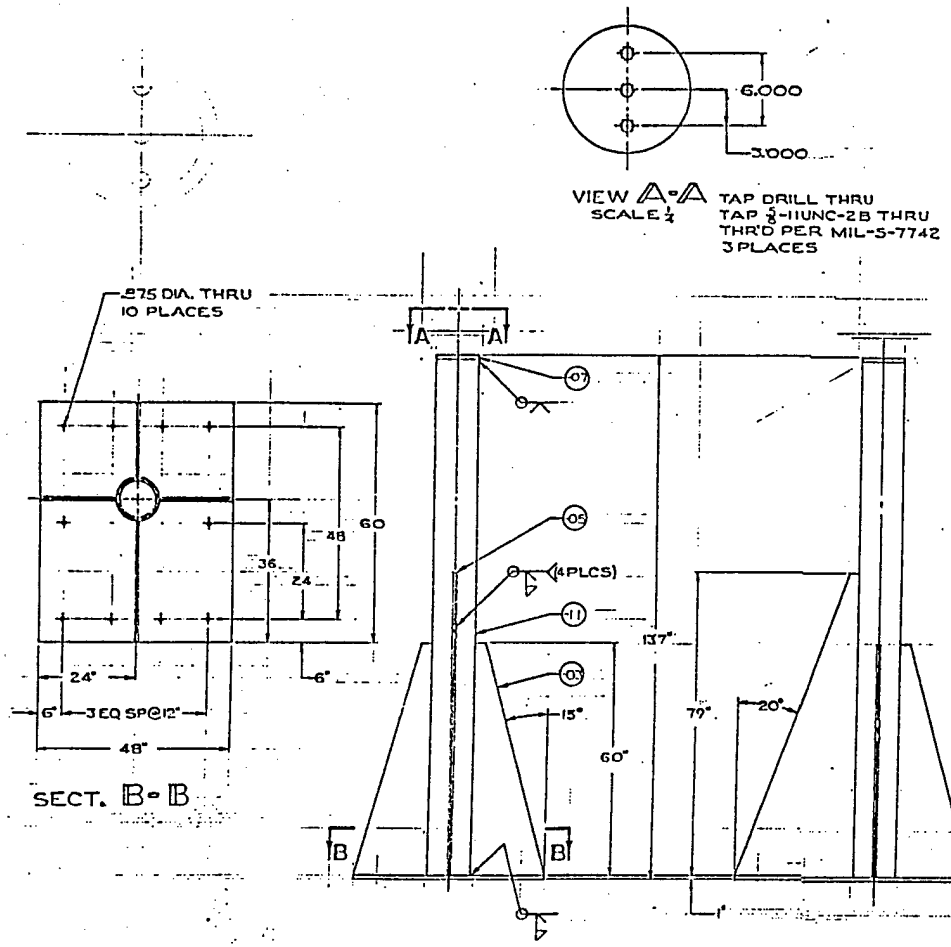


-35 DETAIL
SCALE 1/4



-37 DETAIL
SCALE 1/4

		U.S. AIR FORCE	
		DISH-ASSEMBLY SOLAR COLLECTOR SOLAR ROCKET STUDIES	
		07870	E X828160



1		SUPPORT	-11	STL PIPE, 10" SCH 160	
1		MTG PL	-07		11.75 DIA-1.00
1		GUSSET	-05	QQ-S-634	79.00-30.00
3		GUSSET	-03	1020 STL PL	60.00-18.00
1		BASE PL	-01		60.00-48.00-1.00
1		SUPPORT	-10		
-10	STA	NOMENCLATURE	DWG NO OR IDENTIFYING NO		MATERIAL / SPECIFICATION

PARTS LIST

U.S. AIR FORCE

PEDESTAL-
SOLAR COLLEC. DISH
SOLAR ROCKET STUDY

F 07670 X828278

X828278